REMARKS

Reconsideration of this application, as amended, is respectfully requested.

Affirmation of Election

Applicants hereby affirms the Election of Group I, claims 1 and 3-6 which have now been canceled and replaced with new claims 11-13.

THE CLAIMS

Claims 1-10 have been canceled, without prejudice, and the subject matter of elected claims 1 and 3-4 has been rewritten as new claims 11-13.

The new claims have been prepared to more clearly recite the distinguishing features of the present invention in better compliance with the requirements of 35 USC 112, second paragraph.

No new matter has been added, and it is respectfully requested that the new claims be approved and entered and that the rejection under 35 USC 112, second paragraph, be withdrawn.

THE PRIOR ART REJECTION

Claims 1 and 3-6 were rejected under 35 USC 102 as being anticipated by King et al (USP 5,633,724). This rejection,

however, is respectfully traversed with respect to the new claims.

The claimed present invention relates to an analyzing device for analyzing a sample on the basis of a fluorescent state of the surface of a waveguide plate by directly guiding light to the interior of the waveguide plate and fluorescence-pumping the labeled fluorescent substances of a sample to be analyzed which is hybridized to sampling probes that are fixed on the waveguide plate with an evanescent wave that occurs when the light entirely reflects at a critical point. Namely, according to the present invention as recited in new claim 11, a sample chip analyzing device is provided which includes a waveguide plate, a light source and a pickup member. The waveguide plate entirely reflects and guides incident light and has a number of sampling probes that are connectable to a sample to be analyzed. The light source irradiates fluorescent pumping light onto an end face of an end portion of the waveguide plate that is inserted into a light-shielding box. And the pickup member picks up an image of substantially an entire surface of the waveguide plate. In operation, the sample to be analyzed is labeled with fluorescent substances that are fluorescence-pumped by an evanescent wave which occurs when the fluorescent pumping light enters into an interior of the waveguide to be entirely reflected and guided, and the sample is analyzed by detecting respective

ones of the sampling probes that are coupled to the fluorescence-pumped flourescent substances of the labeled sample, based on data outputted by the pickup member.

As recognized by the Examiner, King et al discloses a technique for analyzing a sample by fluorescence-pumping labeled fluorescent substances of a sample by an evanescent wave that occurs when light entirely reflects in a prism at a critical point, and by detecting the fluorescent state thereof by means of a CCD, etc.

In both the device of the claimed present invention and in King et al, analysis is carried out on a fluoresced sample to be analyzed by pumping labeled fluorescent substances by an evanescent wave that occurs when light entirely reflects at a critical point.

It is respectfully submitted, however, that the claimed present invention differs from the technique disclosed in King et al in the following points:

(i) According to the structure of the claimed present invention, light incident into the waveguide plate is guided while entirely reflecting the same. However, in King et al, light coming from the exterior of the prism is entirely reflected in an area responsive to the light flux. Therefore, in King et al, only samples of the same quantity as that of samples fixed in a narrow area responsive to the light flux can be analyzed,

whereas the device of the claimed present invention is capable of analyzing samples of a number corresponding to the number of samples fixed on the entire surface of the waveguide plate. As a result, in King et al, the number of samples to be analyzed per unit of time is small and a long period of time is required to analyze a large number of samples so that the efficiency of analysis is inferior. The device of the claimed present invention solves this shortcoming.

(ii) The device of the claimed present invention is structured so that light is guided with respect to the end face of the waveguide plate and is entirely reflected, so that an optical system such as lenses to converge light when making light incident into the waveguide plate is not required. King et al, by contrast, does require a complicated optical system which converges light to a prescribed beam system when guiding the same to the prism, between the prism and the light source thereof. In addition, in King et al, the light is easily subjected to disturbance light when propagating in air, and light other than the wavelength which pumps labeled fluorescent substances is made incident into the sample to be analyzed, whereby the fluorescent substances are not efficiently pumped. Still further, since light attenuates when passing through a lens, etc., the structure disclosed in King et al requires a light source of greater

output. By contrast, in the device of the claimed present invention, an optical system for making the light incident onto the waveguide plate can be simplified or omitted, and at the same time a light source of lower output may be used. In addition, with the structure of the claimed present invention, since the light is made incident directly into the end face of the waveguide plate, negative influences due to disturbances can be minimized, so that excellent analysis accuracy can be achieved.

It is respectfully submitted that King et al does not at all disclose, teach or suggest the above describe distinguishing structural features and advantageous effects of the claimed present invention as recited in new claims 11-13.

And it is respectfully submitted that the present invention as recited in new claims 11-13 patentably distinguishes over King et al, taken singly or in combination with any of the other prior art references of record, under 35 USC 102 as well as under 35 USC 103.

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In view of the foregoing, entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

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